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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,548	07/10/2006	Akihide Nagao	06387/HG	5622

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EXAMINER	
YEE, DEBORAH	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
02/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,548	NAGAO ET AL.	
	Examiner	Art Unit	
	Deborah Yee	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *6, 18 to 32* is/are withdrawn from consideration.

5)☒ Claim(s) *2,7,8,10,11,14,15 and 17* is/are allowed.

6)☒ Claim(s) *1, 3 to 5, 9,12,13 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/15/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I, claims 1 to 5 and 7 to 17 in the reply filed on December 22, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 6 and 18 to 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 3 to 5, 9, 12, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over machine-English translation of Japanese patent 2002-241837 (" Suwa").

5. Steel plate example A in table 1 on page 8 of Suwa meets the claimed composition. In addition, example A in Table 2 is processed according to example 1A in substantially the same manner as claimed by Applicant comprising the steps of subjecting steel plate having a thickness of 12 mm to heating at 855˚C, hot rolling with a finishing temperature of 791˚C (within the claimed finishing temperature of ≥ Ar3), direct

quenching from the Ar3 transformation point or higher temperature to 196˚C (within claimed cooling temperature of 400˚C or lower), and then directly tempering at a heating rate of 15˚C/sec to a tempering temperature of 680˚C (within claimed tempering temperature of 460˚C to Ac1 transformation point) .

6. Suwa in paragraph [0042] discloses the heating rate of 15˚C/sec to be the average heating rate throughout the board thickness direction and is heated at said rate to a tempering temperature of 680˚C which would suggest Applicant's claimed limitation of heating to 520˚C or above of the maximum ultimate temperature at the plate thickness center portion at an average temperature-rising rate of 1˚C/sec or larger at the plate thickness center portion up to a specified tempering temperature between 460˚C and the Ac1 transformation point. Note that the average prior art heating rate of 15˚C/sec across the board thickness would be equivalent to a heating rate of 1˚C/sec or larger at plate thickness center in absence of proof to the contrary.

7. Similar to present invention, Suwa in paragraphs [0037] –[0038] teaches tempering by utilizing an induction furnace that is arranged on-line with rolling and quenching apparatus to achieve immediate hardening and energy cost saving.

8. Also Suwa in paragraphs [009]-[0012] teaches the same goal as present invention which is to produce a martensitic-bainitic steel plate having excellent tensile strength and toughness by tempering in such a manner as to precipitate cementite in finely dispersed state, thereby suppressing agglomeration and coarsening of cementite.

9. Also Suwa in claim 3 teaches steel alloy having a composition with constituents whose wt% ranges overlap and therefore suggest those recited by dependent claims.

10. For the foregoing reasons, claims would not patentably distinguish over prior art.

11. A copy of machine-English translation can be obtained going to the internet at http://www.ipdl.inpit.go.jp/homepg_e.ipdl

Allowable Subject Matter

12. Claims 2, 7, 8, 10, 11, 14,15 and 17 are allowed.

13. The art of record does not teach or fairly the method for manufacturing steel plate as recited by the claims comprising the steps of hot rolling, quenching and then tempering to 520˚C or above of the maximum ultimate temperature at the plate thickness center portion at an average temperature-rising rate of smaller than 1˚C/s at the plate thickness center portion between the tempering-start temperature and 450˚C, and then at an average temperature-rising rate of 1˚C/s or larger at the plate thickness center portion up to a specified tempering temperature between 460˚C and the Ac1 transformation point.

14. Applicant has discovered that when tempering is conducted at or above 520˚C, by the regulation of average temperature-rising rate at the plate thickness center portion to a low level smaller than 1˚C/sec, between the tempering-starting temperature and 460C for a given time, then the cementite generated by auto-tempering during quenching is dissolved. Furthermore, when the average temperature-rising rate at the plate thickness center portion is increased to 1˚C/s or larger up to a specified tempering temperature between 460˚C and the Ac1 transformation point, then dispersed precipitation of fine cementite are attained which results in steel having improve strength and toughness before and after PWHT (post welded heat treatment). Detailed explanation for cooling step is disclosed on pages 16 to 21 of Applicant's specification.

In addition, comparative test data shown in tables 1-1,1-2,2-1,2-2,3-1 and 3-1 on pages 26 to 31 of Applicant's specification establishes criticality for claimed heating rates and tempering temperature ranges.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/